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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
KAO, CHIH CHENG G	

ART UNIT	PAPER NUMBER
2882	

DATE MAILED: 05/06/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/705,203	CHOU ET AL.	
	Examin r	Art Unit	
	Chih-Cheng Glen Kao	2882	

-- The MAILING DATE of this communicati n appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *24 March 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *4-6,8-12 and 14-22* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *4-6,8-12 and 14-22* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *07 July 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Information Disclosure Statement

1. The listing of references in the specification is not a proper information disclosure statement. 37 CFR 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP § 609 A(1) states, "the list may not be incorporated into the specification but must be submitted in a separate paper." Therefore, unless the references have been cited by the examiner on form PTO-892, they have not been considered.

Drawings

2. The corrected replacement drawings filed 7/7/03 are now acceptable.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claim 11 is rejected under 35 U.S.C. 102(e) as being anticipated by Suga (US Patent 6297908).

Suga discloses an information display (Title) comprising: a transmissive layer (Fig. 4, #12); a light emitting device capable of displaying information disposed to emit light through a

transmissive layer, thereby displaying the information to a viewer (col. 2, lines 58-60); and a frustrator element comprising a surface diffuser (Fig. 4, #42), which would necessarily frustrate total internal reflections of light emitted by the light emitting device, wherein the transmissive layer is disposed between the frustrator and the light emitting device (col. 2, lines 58-60).

4. Claims 11 and 22 are rejected under 35 U.S.C. 102(e) as being anticipated by Fujisawa et al. (US Patent 6002464).

5. Regarding claim 11, Fujisawa et al. discloses an information display (Fig. 5) comprising: a transmissive layer (Fig. 5, #1); a light emitting device (Fig. 5, #23) capable of displaying information disposed to emit light through a transmissive layer, thereby displaying the information to a viewer; and a frustrator element comprising a surface diffuser (Fig. 5, #3), which would necessarily frustrate total internal reflections of light emitted by the light emitting device, wherein the transmissive layer (Fig. 5, #1) is disposed between the frustrator (Fig. 5, #3) and the light emitting device (Fig. 5, #23).

6. Regarding claim 22, Fujisawa et al. discloses an information display (Fig. 5) comprising: a transmissive layer (Fig. 5, #1); a light emitting device (Fig. 5, #23) capable of displaying information disposed to emit light through a transmissive layer, thereby displaying the information to a viewer; a first frustrator element (Fig. 5, #3) disposed onto the transmissive layer having a microstructured surface facing the viewer (top of Fig. 5); and a second frustrator element (Fig. 5, #2) comprising a volume diffuser between the microstructured surface and the

transmissive layer, wherein the frustrators would necessarily frustrate total internal reflections of light emitted by the light emitting device.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claims 4-6, 18, and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suga in view of Arai et al. (US Patent 6275338).

8. Regarding claim 4, Suga discloses an information display (Title) comprising a light emitting device capable of displaying information disposed to emit light through a transmissive layer, thereby displaying the information to a viewer (col. 2, lines 58-60); and a volume diffuser (Fig. 1, #15) disposed to receive light from the light emitting device and which would necessarily frustrate total internal reflections of light emitted by the light emitting device, wherein the volume diffuser is dispersed in a matrix material (col. 4, lines 35-36).

However, Suga does not seem to specifically disclose voids.

Arai et al. teaches voids (col. 4, lines 48-50).

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to modify the device of Suga with the voids of Arai et al., since one would be motivated to incorporate this to provide a light regulation element that is easily manufactured

(col. 2, lines 45-47) as implied from Arai et al. Secondly, the volume diffusers of Suga (col. 4, lines 35-36) and Arai et al. (col. 4, lines 46-52) are art-recognized equivalents in that they both diffuse light in a display system with acrylic beads or the like. It would have been within general skill in the art to substitute one type of volume diffuser for another.

9. Regarding claim 5, Suga further discloses a diffusive surface oriented towards the transmissive layer (Fig. 1, #12).

10. Regarding claim 6, Suga further discloses a microstructured surface oriented toward the transmissive layer (Fig. 12).

11. Regarding claim 18, Suga further discloses the diffuser between the light emitting device and transmissive layer (Fig. 1, air).

12. Regarding claim 19, Suga further discloses the diffuser between the transmissive layer (Fig. 1, #12) and a viewer position.

13. Claims 4, 5, 18, and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fujisawa et al. in view of Arai et al.

14. Regarding claim 4, Fujisawa et al. discloses an information display (Fig. 5) comprising: a light emitting device (Fig. 5, #23) capable of displaying information disposed to emit light

through a transmissive layer (Fig. 5, #1 or top of Fig. 5), thereby displaying the information to a viewer; and a volume diffuser, which would necessarily frustrate total internal reflections.

However, Fujisawa et al. does not disclose voids.

Arai et al. teaches voids (col. 4, lines 48-50).

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to modify the device of Fujisawa et al. with the voids of Arai et al., since one would be motivated to incorporate this to provide a light regulation element that is easily manufactured (col. 2, lines 45-47) as implied from Arai et al. Secondly, the volume diffusers of Fujisawa et al. and Arai et al. are art-recognized equivalents in that they both diffuse light in a display system. It would have been within general skill in the art to substitute one type of volume diffuser for another.

15. Regarding claim 5, Fujisawa et al. further discloses the volume diffuser further comprising a diffusive surface oriented toward the transmissive layer (Fig. 5, #2).

16. Regarding claim 18, Fujisawa et al. further discloses the volume diffuser (Fig. 5, #2) between the light emitting device (Fig. 5, #23) and the transmissive layer (top of Fig. 5).

17. Regarding claim 19, Fujisawa et al. further discloses the volume diffuser (Fig. 5, #2) between the transmissive layer (Fig. 5, #1) and the viewer position (top of Fig. 5).

18. Claims 8, 9, 20, and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suga in view of Arai et al. as applied to claim 4 above, and further in view of Igarashi (JP 05-034669).

19. Regarding claims 8 and 9, Suga in view of Arai et al. suggests a device as recited above. However, Suga does not seem to specifically disclose a plurality of absorptive louvers. Igarashi teaches a plurality of absorptive louvers (Abstract and Cover Figure).

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to modify the suggested device of Suga in view of Arai et al. with the absorptive louvers of Igarashi, since one would be motivated to incorporate this to miniaturize the display device and attain higher efficiency (Abstract) as shown by Igarashi.

20. Regarding claim 20, Suga further discloses the diffuser between the light emitting device and transmissive layer (Fig. 1, air).

21. Regarding claim 21, Suga further discloses the diffuser between the transmissive layer (Fig. 1, #12) and a viewer position.

22. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Suga in view of Arai et al. and Igarashi as applied to claim 8 above, and further in view of Tokas (US Patent 5104210).

Suga in view of Arai et al. and Igarashi suggests a device as recited above.

However, Suga does not disclose reflective louvers.

Tokas teaches reflective louvers (col. 2, lines 24-27).

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to modify the device of Suga in view of Arai et al. and Igarashi with the reflective louvers of Tokas, since reflective and absorbing louvers are considered art-recognized equivalents as shown by Tokas (col. 2, lines 24-27). It would have been within routine skill in the art to substitute one for another. One would be motivated to incorporate reflective louvers for better controlling light as shown by Tokas (col. 2, lines 24-27).

23. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fujisawa et al. in view of Abileah et al. (US Patent 5629784).

Fujisawa et al. discloses an information display (Fig. 5) comprising: an optically transmissive layer (Fig. 5, #1); a light emitting device (Fig. 5, #23) capable of displaying information disposed to emit light through the transmissive layer, thereby displaying the information to a viewer; a first frustrator element disposed onto the transmissive layer and having a microstructured surface facing the viewer (Fig. 5, #3); and a second frustrator comprising a volume diffuser (Fig. 5, #2) between the microstructured surface and the light emitting device, wherein both frustrators would necessarily frustrate total internal reflections.

However, Fujisawa et al. does not disclose prismatic microstructures.

Abileah et al. teaches prismatic microstructures (Fig. 2, #17).

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to modify the device of Fujisawa et al. with the prismatic microstructures of

Abileah et al., since one would be motivated to incorporate this to better provide brightness enhancement (col. 10, line 13) as shown by Abileah et al.

24. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Suga in view of Arai et al. as applied to claim 4 above, and further in view of Beeteson (US Patent 5796382).

Suga in view of Arai et al. suggests a device as recited above.

However, Suga does not disclose an electroluminescent light emitting device.

Beeteson teaches an electroluminescent light emitting device (col. 2, lines 44-47).

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to modify the suggested device of Suga in view of Arai et al. with the electroluminescent device of Beeteson, since various light emitting devices are art-recognized equivalents shown by Beeteson (col. 2, lines 44-47). It would have been within routine skill in the art to substitute one for another. One would be motivated to incorporate an electroluminescent device to better provide light to an LCD panel (col. 2, lines 37-47) as shown by Beeteson.

25. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Suga in view of Arai et al. as applied to claim 4 above, and further in view of Pichler (US Patent 5929562).

Suga in view of Arai et al. suggests a device as recited above.

However, Suga does not disclose an organic electroluminescent light emitting device.

Pichler teaches an organic electroluminescent light emitting device (Abstract).

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to modify the suggested device of Suga in view of Arai et al. with the electroluminescent device of Pichler, since these devices are art-recognized equivalents in that they are used as backlights for displays. It would have been within routine skill in the art to substitute one for another. One would be motivated to incorporate organic electroluminescent devices to better make multi-color or true RGV emissive displays (col. 1, lines 9-15) as implied from Pichler.

26. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Suga in view of Arai et al. as applied to claim 4 above, and further in view of Evanicky et al. (US Patent 6611249).

Suga in view of Arai et al. suggests a device as recited above.

However, Suga does not disclose a phosphor-based light emitting device.

Evanicky et al. teaches a phosphor-based light emitting device (col. 9, lines 64-67).

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to modify the device of Suga in view of Arai et al. with the phosphor-based device of Evanicky et al., since one would be motivated to incorporate this to create a white balance and brightness that may be adjustable (col. 9, line 60, to col. 10, line 4) as shown by Evanicky et al. Secondly, these light-emitting devices are considered art-recognized equivalents in that they all illuminate displays. It would have been within routine skill in the art to substitute one for another.

27. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fujisawa et al. in view of Arai et al. as applied to claim 4 above, and further in view of Abileah et al.

Fujisawa et al. in view of Arai et al. suggests a device as recited above. Fujisawa et al. further discloses a film (Fig. 5, #3) on a side of the transmissive layer (Fig. 5, #1) opposing the light emitting device (Fig. 5, #23).

However, Fujisawa et al. does not disclose a prismatic film.

Abileah et al. teaches a prismatic film (Fig. 2, #17).

It also would have been obvious, to one having ordinary skill in the art at the time the invention was made, to modify the device of Fujisawa et al. with the prismatic film of Abileah et al., since one would be motivated to incorporate this to better provide brightness enhancement (col. 10, line 13) as shown by Abileah et al.

Response to Arguments

28. Objections to the drawings and claims in the Office Action mailed 10/21/2003 have been withdrawn in light of the amendments and arguments made of record on 3/24/2004.

29. Applicant's arguments with respect to claims 4-6, 8-12, and 14-22 have been considered but are moot in view of the new ground(s) of rejection.

Regarding Arai et al., Arai et al. still applies for its teaching of voids. In addition, the diffuser of Arai et al. would necessarily frustrate total internal reflections between itself and the air surrounding it (top of Fig. 1). Furthermore, the voids of Arai et al. would necessarily frustrate total internal reflection by changing the angles of light traveling through the diffuser.

Regarding Tokas, Tokas still applies for its teaching of reflective louvers.

Regarding Beeteson, Pichler, Evanicky et al., these references still apply for their respective teachings of a light source in a light emitting device.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chih-Cheng Glen Kao whose telephone number is (571) 272-2492. The examiner can normally be reached on M - F (9 am to 5 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ed Glick can be reached on (571) 272-2490. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

gk

DAVID V. BRUCE
PRIMARY EXAMINER